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[54] **LIPOSOME IMMUNOANALYSIS BY FLOW INJECTION ASSAY**

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[58] **Field of Search** 435/7.92, 7.93, 7.94, 435/188, 810, 961; 436/518, 528, 532, 541, 808, 829

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[57] **ABSTRACT**

A method of immunoanalysis combines immobilized immunochemistry with the technique of flow injection analysis, and employs microscopic spherical structures called liposomes, or lipid vesicles, as carriers of detectable reagents. Liposomes are modified on their surface with analytical reagents, and carry in their internal volume a very large number of fluorescent or electroactive molecules. Aspects of this embodiment of the invention include the chemistry for covalent immobilization of antibody fragments in a specified orientation, the use of liposomes in a flow injection analysis system, and the combination of automated sampling and analysis with reusable immunoreactants. Another aspect of the invention involves the non-covalent binding of liposomes to a receptor for use in a homogeneous assay. In another aspect of the invention the intensity of scattered light is quantitated as a measure of liposome aggregation in response to a concentration-dependent immunospecific reaction.

28 Claims, 9 Drawing Sheets